

Remarks

Claims 1 to 31 are present in this application. Claims 1, 10, 14, 18 and 26 were amended, and claims 7, 19, and 21 were canceled herein. Claims 29, 30 and 31 were added herein. No new matter was added.

Claims 15-17 were allowed by the examiner, and claim 23 was objected to as being dependent on a rejected claim. Applicants are grateful for the allowance of those claims; however, Applicants believe that all the claims remaining in the application are in condition for allowance. New claim 29 was added to write claim 23 in independent form. Claims 30 and 31 were added to further define the invention by adding claims that cover limitations found in paragraphs 37 and 43 of the specification. Claims 1-14, 18-22 and 24-28 were rejected under 102 and 103. All of the rejections and objection are traversed and reconsideration of claims 1-14, 18-22, and 24-28 and new claims 29-31 is respectfully requested.

Claims 18, 19 and 22 were rejected under 102(b) as being anticipated by Hunt (4,972,801), because Hunt "shows a containment vessel 11...aeration device 68 and an aqueous medium 18 having a top surface, within the containment vessel; the aeration device move[s] the aqueous solution...to form at least one circular vortex 24 comprising the movement of at least the majority of the aqueous medium 18 in the vortex and is parallel to the top surface of the aqueous medium. The containment vessel 11 having a bottom 17 sloped to allow the collection of waste and sludge in an area less than 20 % of the bottom. The aeration devices 68 are located across the radius of the containment vessel 11, see fig. 1."

Applicants traverse the rejection. From Hunt, there is no way to quantify the amount of aqueous medium that is moved, nor the amount of area of the bottom of which the sludge and waste collects. However, to advance this application to allowance, claim 18 was amended to include the limitations of claim 19 and claim 19 was canceled. Claim 18 as amended contains the limitation that there are at least two complementary circular vortexes. In paragraph 60 and figures 6 and 7 of the specification, Applicants have defined complementary vortexes. Hunt does not teach nor suggest the formation of complementary vortexes parallel to the surface of the aqueous medium any where in Hunt's patent; therefore, claim 18 and claims 20 and 22 which depend from claim 18 are patentable over Hunt. It is respectfully requested that the 102 rejection over Hunt be withdrawn.

Claims 1, 4-7 and 11-14, and 25 were rejected under 103(b) over Sevic ('337) in view of Shaar. The Office Action does not adequately explain how the combination of Sevic and Shaar makes Applicants' claim 1 (and therefore all the claims that depend from claim 1) obvious. Sevic does not disclose a plurality of oxygen generators. Sevic discloses at col.3, lines 53-65:

"The oxygen...may be either produced on site when the breeder's requirements are such that they justify the installation of a small factory on site, such as a factory using adsorption techniques (VSA and PSA, that is to say Vacuum Switch Adsorption and Pressure Swing Adsorption, respectively), this on-site factory producing a gas containing more than about 90% by vol. Of oxygen. Preferably, the oxygen is however stored on site in a reservoir in the form of a liquid oxygen and is generally delivered by tanker to the breeder's site." (Emphasis added.)

Sevic discloses a single factory, or a reservoir of oxygen. Even though Sevic mentions VSA and PSA can be used in the factory, Sevic does not teach nor suggest a plurality of oxygen generators. The Office Action specifically points to col. 2, lines 34-52 of Sevic in which Sevic discloses the use of an ozonizer. An ozonizer is not an oxygen generator. The ozonizer is an ozone generator; it converts a portion of oxygen that is injected into the ozonizer to ozone. As Sevic discloses at col. 2, lines 39-43: "Oxygen is injected through the ozonizer, with about 3 to 15% of the oxygen being converted to ozone, the remainder of the oxygen injected with the ozone into the water being used as described above." Sevic does not specifically describe at col. 2, lines 39-43 where the oxygen comes from that is provided to the ozonizer to produce the ozone, but as indicated above, Sevic does disclose that a factory may produce or a reservoir of liquid oxygen can be used to supply the oxygen for Sevic's process. Therefore, Sevic does not teach nor suggest a plurality of oxygen generators as claimed by Applicants. Shaar discloses that air or other oxygen containing gas can be pumped into the pond or ponds, but no where does Shaar disclose the source of the other oxygen containing gas to be used in the process Shaar discloses. A pump system is not an oxygen generator or an ozone source as indicated by the Office Action. A pump moves liquid(s). Shaar does not even mention the word "ozone" or the word "generator" therein. Shaar states at col.4, lines 45-46 and 57-60 that air or other oxygen containing gas may be injected into a pump used for water circulation, but Shaar does not disclose the source of that oxygen containing gas. Therefore, the combination of

Shaar and Sevic does not make Applicants invention comprising a plurality of oxygen generators of claim 1 obvious. To further differentiate Applicants plurality of oxygen generators from the factory or single source disclosed by Sevic, Applicants have amended claim 1 to provide that their "oxygen generators are located proximally to said containment vessels or are disposed within the containment vessels or both." It is therefore respectfully requested that the 103 rejection under Sevic in view of Shaar of claim 1 and all the claims that depend from claim 1 be withdrawn. (The Office Action indicates additional reasons for the rejections of some of the dependent claims which are traversed; however, because the references do not teach a plurality of oxygen generators, Applicants believe it is unnecessary to respond to those individual rejections at this time.)

With respect to Claim 1, the Office Action states that it would be obvious to use a plurality or multiples of the aquafarming system of Sevic. Even if that were true, Sevic teaches using a factory or reservoir which would mean just providing for a bigger factory or reservoir. Sevic does not teach nor suggest the use of a plurality of oxygen generators that are located proximally to said containment vessels or are disposed within the containment vessels or both.

With respect to claims 6 and 11, the Office Action states that to use the vacuum swing absorption generator of Sevic with the system of Shaar would have been obvious to one skilled in the art in order to achieve a greater percentage by volume of oxygen. Applicants traverse this rejection. Even if that were true, no where does Sevic and Shaar teach the use of a plurality of oxygen generators as Applicants have claimed.

With respect to claims 12 and 13, the Office Action states that to use the timer control and sensors of Sevic with the system of Shaar would have been obvious to one skilled in the art in order to control the generators output to activate them at a time when it is most efficient and necessary, such as lower oxygen levels observed at night. Even if that were true, no where does Sevic and Shaar teach the use of a plurality of oxygen generators as Applicants have claimed.

With respect to claim 14, the Office Action states that to allow the biomass of the shrimp to be at least 0.5 kg/m² or greater in the system of Shaar as taught by Sevic, see

col.1, lines 58-60 would have been obvious to one skilled in the art to have maintained the biomass density of the marine animals with the containment vessel at any given density which would result in the maximum operability of the containment vessel and still ensure the health of the marine animals.”

Applicants respectfully disagree. Whether or not the above is true, Shaar in view of Sevic does not teach nor suggest nor provide any motivation for a system for aquafarming comprising a plurality of oxygen generators. Further, the biomass is a measure of mass of shrimp/area of containment vessel. At col. 1, lines 58-60, Sevic discloses the amount of oxygen consumed per ton of fish. Additionally, contrary to what the Office Action states about maximum operability and ensuring the health of the marine animals, the lower the biomass the higher likelihood that the health of the marine animals will be maintained. Therefore, Sevic does not teach nor suggest Applicants' claimed biomass. It is respectfully requested that this 103 rejection be withdrawn.

With respect to claim 25, the Office Action states that in the range noted of between 0.25 and 8, one containment vessel with an oxygen generator present is obvious in the combination of Sevic and Shaar. Applicants traverse this rejection. Shaar does not disclose a source for its oxygen. Sevic does not disclose the number of ponds its factory or reservoir serves. Therefore, Applicants range is not taught nor suggested, and this rejection of claim 25 should be withdrawn.

Claim 3 was rejected under 103 as being unpatentable over Sevic in view of Shaar as applied in claim 1 above and further in view of Woltman (5,014,647), because the Office Action states that Woltman teaches an aquafarming system having a medicine source 10 in communication with oxygen injectors/aspirators, col. 2, lines 25-28. The Office Action states that it would be obvious to use a medicine source of Woltman in the system of the combination of Sevic and Shaar.

Applicants respectfully disagree. Even if that were true, Sevic in view of Shaar fails to make claim 3 obvious for the reason it fails to anticipate the claims as discussed above. Sevic teaches a factory or a reservoir of oxygen. Sevic fails to teach or suggest or provide any motivation for the use a plurality of oxygen generators in a system comprising a plurality of containment vessels for aquafarming. Sevic's preferred embodiment is to provide oxygen via a reservoir, which teaches away from Applicants' plurality of generators. Applicants

realized the drawbacks of using a single source of oxygen enriched gas, e.g. a reservoir, as discussed in paragraph [0012] of Applicants' specification and invented a new system which Sevic in view of Shaar and Woltman does not make obvious. It is therefore respectfully requested that the 103 rejection of claim 3 be withdrawn.

Claims 8-10 were rejected under 103 as being unpatentable over Sevic in view of Shaar as applied to claim 1 above and further in view of Kajisono. The Office Action states that Sevic in view of Shaar does not disclose an oxygen generator being mounted on wheels or a floatable support, and that Kajisono teaches a water purifier apparatus 40 mounted on a floatable support 11. The Office Action states that to make the oxygen generator of the combination of Sevic in view of Shaar portable as shown by Kajisono would have been obvious to one skilled in the art. Also, the Office Action states that to make an old device portable or movable without producing any new or unexpected results involves only routine skill in the art, and to make an old device portable or movable without unexpected results involves only routine skill.

Applicants respectfully disagree. Sevic in view of Shaar teaches a factory for producing oxygen or preferably a reservoir of liquid oxygen delivered to an aquafarming site via a tanker. For the reasons stated above Sevic in view of Shaar fails to teach or suggest a system comprising a plurality of oxygen generators. Sevic in view of Shaar actually teaches away from a system comprising a plurality of oxygen generators. Further, Kajisono does not make it obvious to mount an oxygen generator on wheels or a floatable support. Kajisono does not even mention the injection of any gas except air into water. Kajisono, like Sevic and Shaar, teaches or suggests nothing about a plurality of oxygen generators. Therefore, Sevic in view of Kajisono fails to teach or suggest Applicants invention comprising a plurality of oxygen generators.

Claims 20 and 21 were rejected under 103 as being unpatentable over Hunt in view of Ido. The Office Action states: "Hunt does not disclose the exact flow rate of the aqueous medium. Ido teaches the use of the pumps causing a current flow of 5 to 20 cm/sec, see col.14, lines 1-4. With respect to claims 20 and 21 to move the aqueous medium at a flow rate of between 4 and 20 cm/sec as taught by Ido in the system of Hunt would have been obvious to one skilled in the art in order to provide enough aqueous medium movement to be

closer to the conditions of the sea and allow for full aeration, the drift of the animals and to move the waste or sludge from the general living area to the bottom."

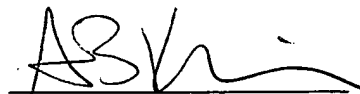
Applicants respectfully disagree. Claim 18 was amended to specify that the at least two circular vortexes are parallel to the top surface of the aqueous medium. Hunt fails to teach two complementary circular vortexes parallel to the surface. Ido does disclose movement of water between 5 to 20 cm/sec; however, the combination of Hunt and Ido, at best, would only teach a single vortex of water parallel to the surface of a tank at the rates that Ido specified. Therefore, Hunt in view of Ido does not teach or suggest Applicants' claimed invention. It is therefore respectfully requested that the 103 rejection over Hunt in view of Ido be withdrawn.

Claims 26 was rejected under 103 as being unpatentable over Sevic and Shaar as applied to claim 1 above and further in view of Ido. The Office Action states:
"Sevic and Shaar do not disclose the exact flow rate of speed of the aqueous medium. Ido teaches the use of the pumps causing a current flow of 5 to 20 cm/sec, see col.14, lines 1-4. With respect to claim 26, to use the teaching of Ido with the system of Sevic and Shaar would have been obvious to provide enough aqueous medium movement to be closer to the conditions of the sea and allow for full aeration, the drift of the animals and to move the waste or sludge from the general living area to the bottom."

Applicants respectfully disagree. Claim 26 is patentable for the same reasons as claim 1. It is therefore respectfully requested that the 103 rejection over Sevic and Shaar in view of Ido be withdrawn.

Applicants believe that all the rejections should be withdrawn and that all the claims are in condition for allowance. Applicants respectfully request that a timely Notice of Allowance be issued in this case.

Respectfully submitted,



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